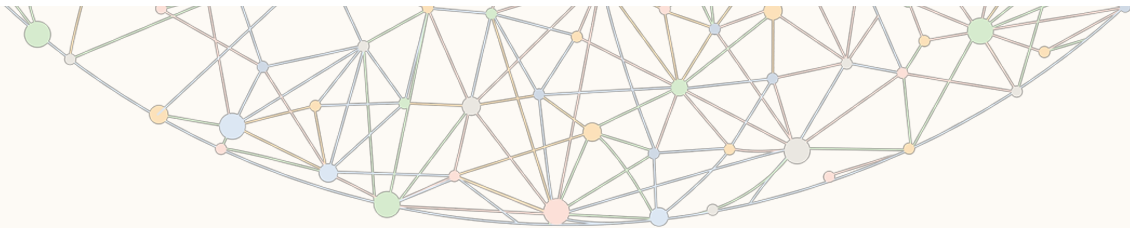




Preparing Youth for the Impact of GAI

Karin Kimbrough
Chief Economist, LinkedIn

November 2023



LinkedIn is a marketplace that connects
over 1 billion professionals globally



1B
Members



65M
Companies
across 200 countries & territories



130K
Schools



41K
Skills

Insights from the Economic Graph

LinkedIn believes in a future of work that is **equitable**, **sustainable**, and **resilient**



Equitable

Opportunity for All

Shedding a light on where opportunity gaps exist and how we can create more equitable outcomes for the workforce.



Sustainable

Sustainable Economy

Providing unique insights on emerging green job and skills trends and how we can work to help address the urgent climate crisis.



Resilient

Career Pathways | Digital Economy

Enabling career mobility and resilience by understanding how disruptive technologies and skills are changing the work we do and how employers are hiring.

Today

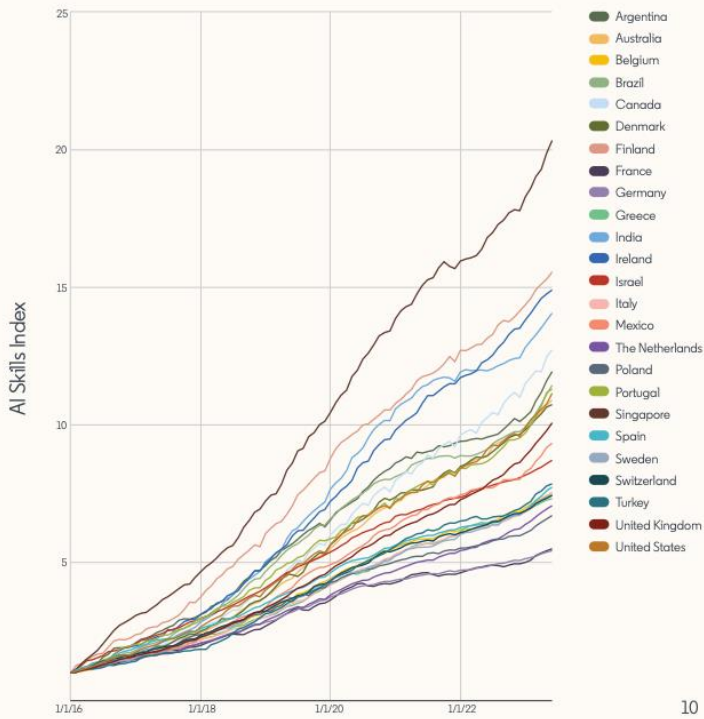
- 1 Surprise! AI skills are increasing quickly across the globe
- 2 Generative AI will change the skills required for many of our jobs
- 3 GAI skills disruption will not occur evenly by industry, age, or gender
- 4 So what?



9x more AI talent in June 2023 than January 2016

Singapore, Finland, Ireland, India, and
Canada are experiencing fastest rate of AI
skills diffusion

AI Skills Index across countries



In 2022, the five fastest-growing AI-related skills added to LinkedIn member profiles, were all skills hinting at the emergence of GAI:

Question Answering:	+332%
Classification:	+43%
Recommender Systems:	+40%
Computer Vision:	+32%
Natural Language Processing (NLP):	+19%



3x In the last five years, the number of US LinkedIn members in “Head of AI” roles has nearly tripled.

AI Artificial Intelligence
(Algorithmic Inference)

GAI Generative AI

GPT Generative Pre-Trained
Transformer

GAI keywords

25% Since early April, the number of LinkedIn member posts mentioning GAI keywords in the US has increased 25% month over month.

Member profiles and job postings

75% Since the start of the year, we've seen on average a 75% increase each month in members worldwide adding terms like "GAI," "ChatGPT," "Prompt Engineering," and "Prompt Crafting," to their profile.

15x In June, members added these keywords to their profiles 15x more frequently than in January.



Generative AI is just one of many factors shifting skill sets...



Prior to GAI, 60% change in jobs skill sets by 2030

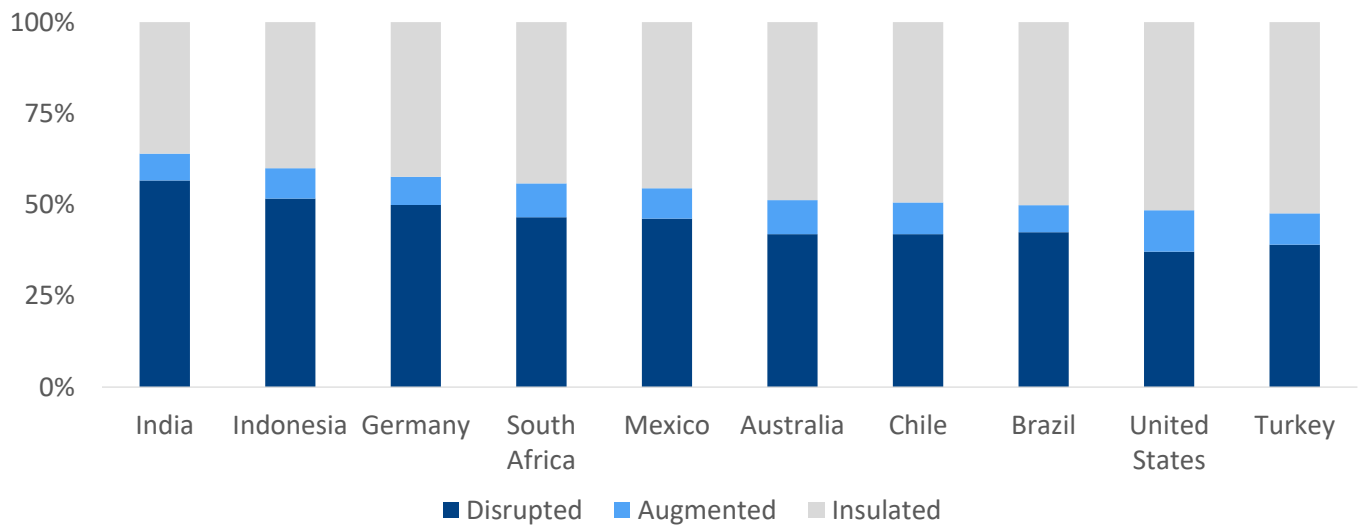


With GAI, 65% change in jobs skill sets by 2030

Source: LinkedIn Economic Graph Research Institute

...but it does have the potential to shift skill sets for many of us

Share of LinkedIn Members by Exposure to Gen AI and Country, 2023



How did we determine this?

- 1 Identify GAI-replicable and GAI-complementary skills
- 2 Assess the share of each occupations' skills that are GAI- replicable and complementary
- 3 Categorize occupations by degree of exposure to GAI

1

LinkedIn researchers identified a list of over 500 skills likely to be affected by GAI technologies, including these skills that are among the most frequently featured by members:

Business and industry: Financial Reporting, Email Marketing, Data Analysis

Communication and media: Writing, Editing, Documentation, Translation, Content Creation

Engineering: Software Development Tools, Programming Languages, Data Science

People: Time Management Tools



2

Occupation	Share of skills potentially augmentable by GAI	Top skills potentially augmentable by GAI: Top skills that could be partly performed by GAI-assisted software	Top people skills and specialized skills: Top skills that need to be performed by humans, and that complement skills potentially augmented by GAI	Share of people skills and specialized skills
Teacher	45%	Lesson Planning, Curriculum Development, Teacher Training, Literacy, Tutoring	Classroom Management, Differentiated Instruction, Elementary Education, Educational Technology, Special Education	53%
Software Engineer	96%	Jenkins, Docker Products, AngularJS, TypeScript, Git	Jira, Agile Methodologies, Microsoft Azure	3%
Nurse	6%	Patient Care, Quality Patient Care, Patient Assessment	Advanced Cardiac Life Support (ACLS), Nursing, Basic Life Support (BLS), Acute Care, Critical Care Nursing	90%
Salesperson	59%	Cold Calling, Retail Sales, Outside Sales, Sales Processes, Inside Sales	Stocking, Hospital Sales, Cardiology, Endocrinology, Medical Sales	15%
Project Manager	28%	Scrum, Submittals, Software Development Life Cycle (SDLC), Agile Methodologies, Agile Project Management	Construction Management, Project Estimation, Pre-Construction, Value Engineering, Change Orders	44%
Customer Service Rep	76%	Phone Etiquette, Typing, Customer Support	Warranties, Food and Beverage Operations, Stocking, Hospitality Service, Dispatching	4%
Driver	9%	Warehouse Operations, Logistics Management, Freight Transportation Planning	Truck Driving, Professional Driving, CDL Class A, CDL, Commercial Driving	88%
Medical Doctor	7%	Medical Research, Cancer, Heart Disease	Medical Education, Internal Medicine, Surgery, General Surgery, Family Medicine	63%
Cashier	59%	Food Service Planning, Merchandising	Stocking, Fast Food, Waiting Tables, Food and Beverage Operations	22%
Childcare Provider	20%	Lesson Planning, Tutoring	Childcare, Working with Children, Babysitting, Child Development, Nannying	76%
Environmental Health Safety Specialist	3%	Risk Assessment, Root Cause Analysis, Geographic Information Systems (GIS)	Environment, Health, and Safety (EHS), Accident Investigation, Occupational Health, Industrial Hygiene, Environmental Compliance	70%
Event Manager	39%	Event Marketing, Hospitality Management, Catering Planning, Virtual Events	Corporate Events, Event Production, Special Events, Meeting Planning, Private Events	44%
Construction Specialist	11%	Construction Drawings, Submittals, Revit	Construction Management, Construction, Flooring, Construction Safety, Pre-Construction	78%
Oil Field Operator	1%	Project Commissioning, Preventive Maintenance Planning	Oil and Gas Drilling, Rig, Oilfield, Well Control, Directional Drilling	89%

Note: Percentages may not add up to 100% due to some skills not falling under these categories.

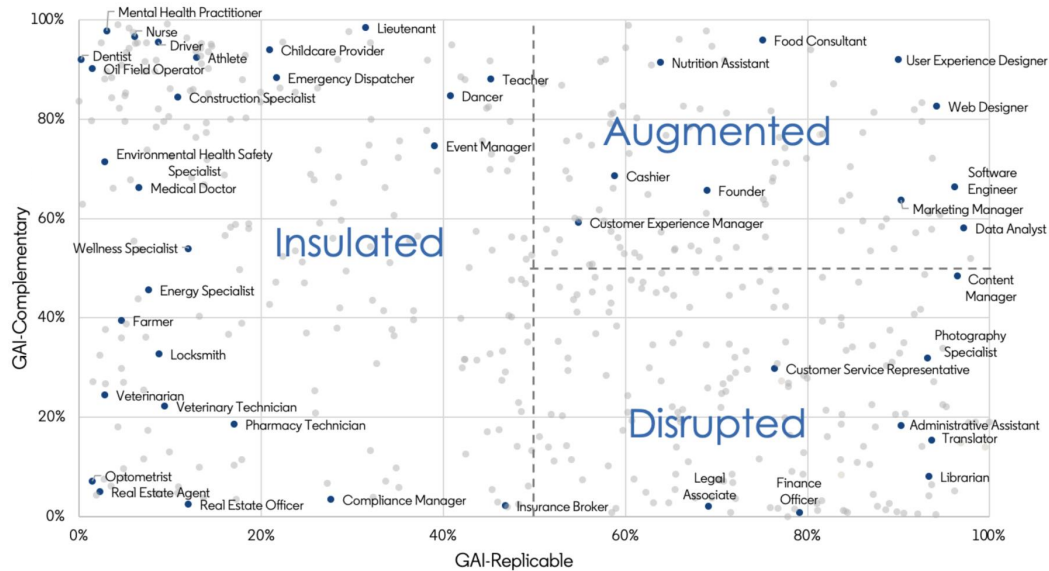
We categorized occupations as augmented, disrupted, or insulated

3

Group	Impact on occupations	Example
Augmented by GAI <i>These jobs' core skills include a large share of both of GAI-replicable and GAI-complementary skills</i>	GAI may affect a relatively large portion of the skills in these jobs, leaving more time for higher value-added complementary skills.	Data Analysts automate the computation and interpretation of metrics with GAI, enabling them to focus their time on GAI-complementary skills, such as cross-functional influencing and stakeholder engagement.
Disrupted by GAI <i>These jobs' core skills include a large share of GAI-replicable and a relatively low share of GAI-complementary skills</i>	As GAI is adopted more broadly, these jobs will undergo reskilling, possibly leading to more innovation.	Language translators' skills shift from doing translations from scratch to reviewing and certifying machine-generated translations, or to specializing on specific legal or literary domains.
Insulated from GAI <i>These jobs have a relatively small proportion of GAI-replicable skills in their core skills</i>	As these jobs are relatively protected from the influence of GAI, their core skills are likely to remain unchanged in the near term. Some of these jobs tend to be susceptible to other forms of automation, such as robotics.	Real estate agents might utilize GAI for writing house descriptions, but core relationship management skills would be insulated from GAI.

Source: LinkedIn Economic Graph Research Institute

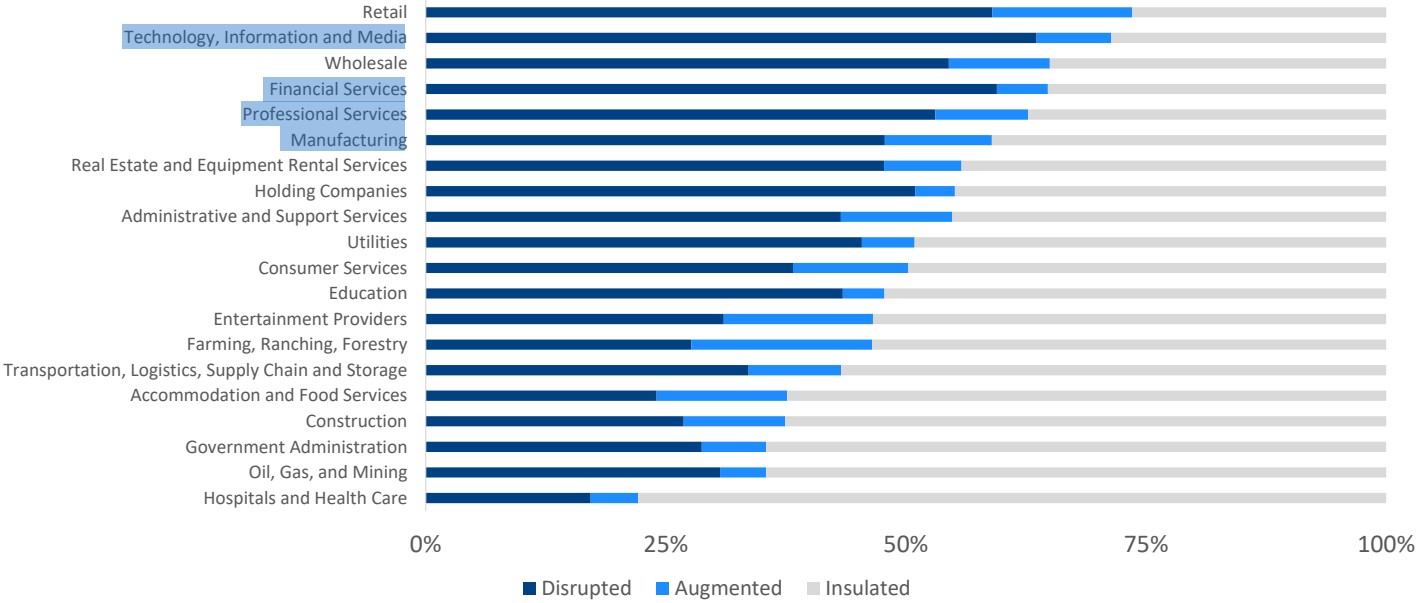
Replicability is key to how GAI will affect jobs



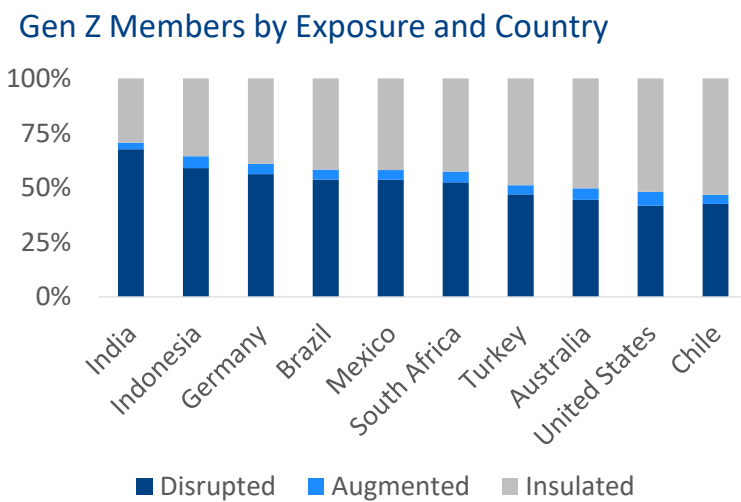
Source: LinkedIn Economic Graph Research Institute

Disruption may disproportionately affect tech/professional services

Share of Indonesian Members, by Exposure Category and Industry



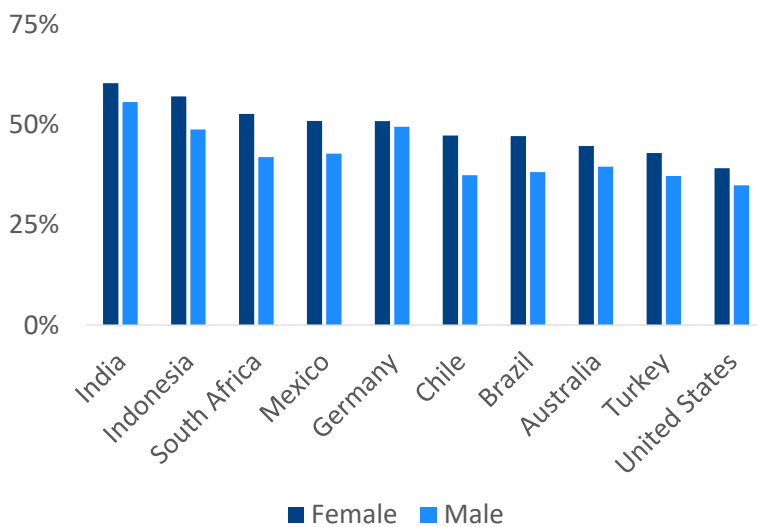
Roles currently occupied by youth are more likely to face disruption



- Youth are more likely to occupy junior roles that are responsible for more replicable tasks
- In many places, they may also be more fluent in technology, preparing them to better leverage GAI for those roles

Roles currently occupied by women are more likely to face disruption

Share of “Disrupted” Members, by Gender



- Historic and ongoing barriers to women’s labor market participation and advancement have reduced average tenure and seniority, potentially explaining why—like youth—women face more disruption
- This makes interventions aimed at achieving labor market equity even more critical now



Equitable access requires investment

Without digital infrastructure and broad data ecosystems, many professionals will not be able to leverage AI, or may be stuck with AI tools that do not reflect local needs and realities.



Pedagogy will need to keep up more than ever

What we teach and how we teach it will change, as it always has—but the necessary rate of change may increase as we re-assess the value of skills long-assumed to be critical.



Systems for assessing and tracking skills need to improve

Formal degrees and past work experience may be increasingly less important in signaling skill competence, which will require better systems for tracking and facilitating skill development.

Linked in



Generative AI and the Future of Work

The context of Africa

November 2023

Discussion: Marcio Cruz

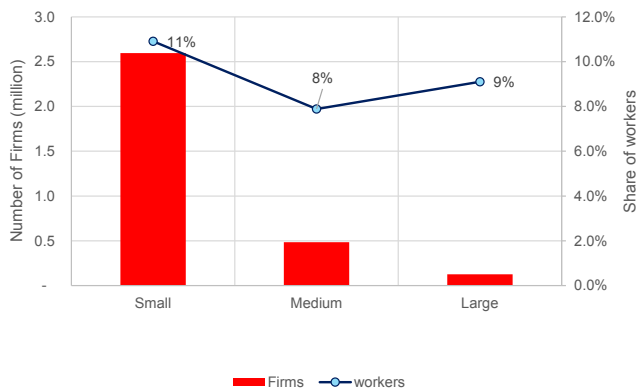


Creating Markets, Creating Opportunities

Africa has a small number of “firms” able to generate good-quality jobs

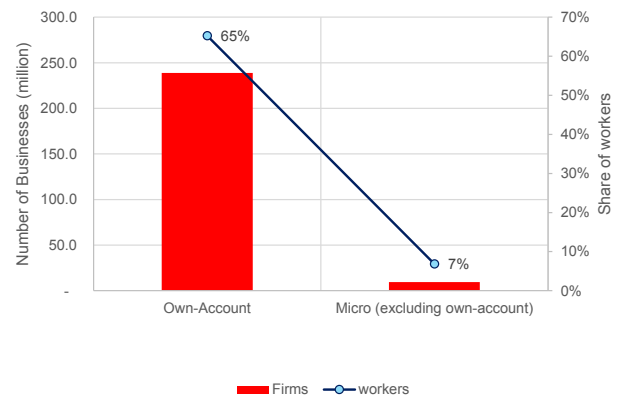
About 3 million firms with 5+ workers (2 million are formal).
Less than 20% of the labor force work for firms with 20+ workers

Panel a. Enterprises with 5+ workers

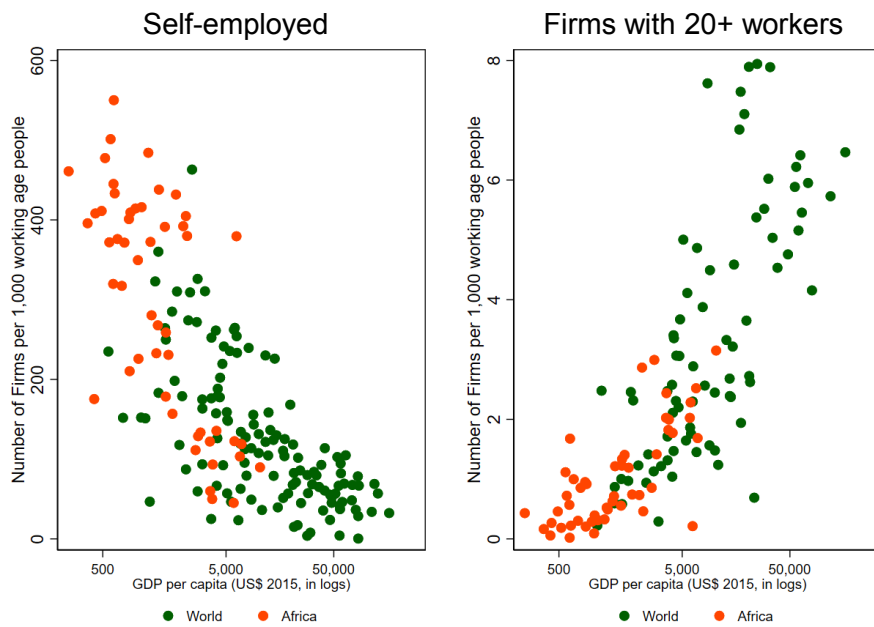


About 70% of the labor force work with micro-businesses.
Mostly informal self-employed.

Panel b. Micro businesses

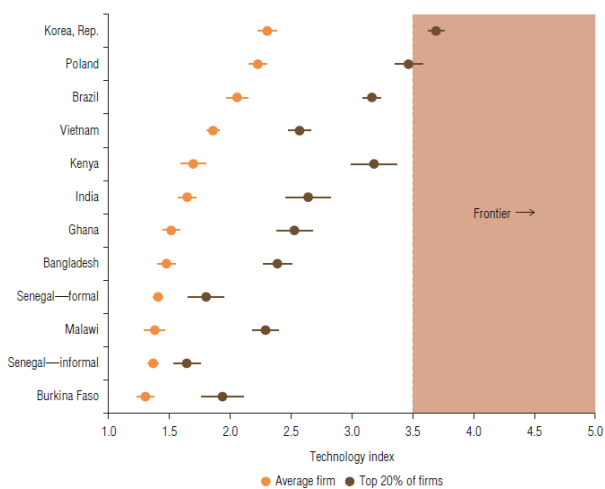


Better jobs for more people require more and better firms



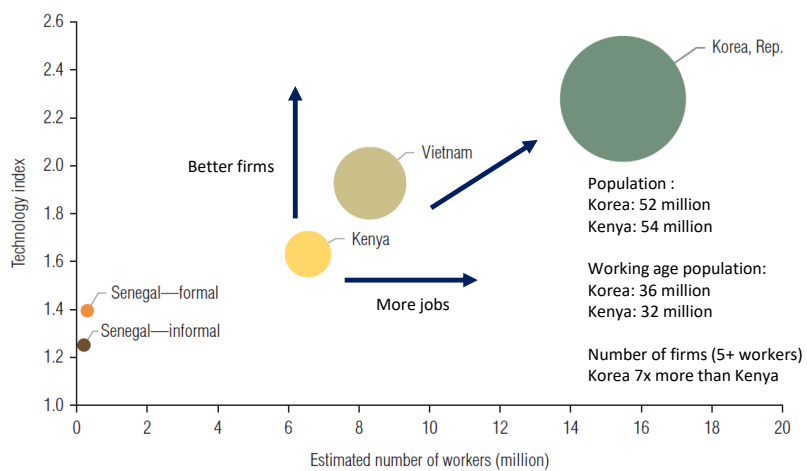
The Technological Divide Across Countries

Most firms are far from the technology frontier



Estimated Technology Sophistication by Country, Manufacturing

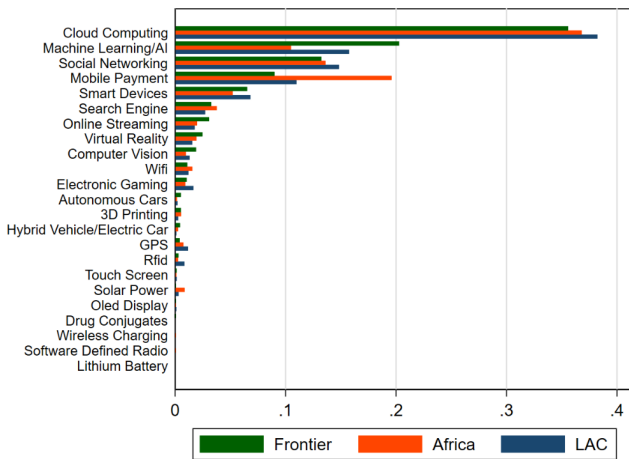
Advanced economies have many more sophisticated firms



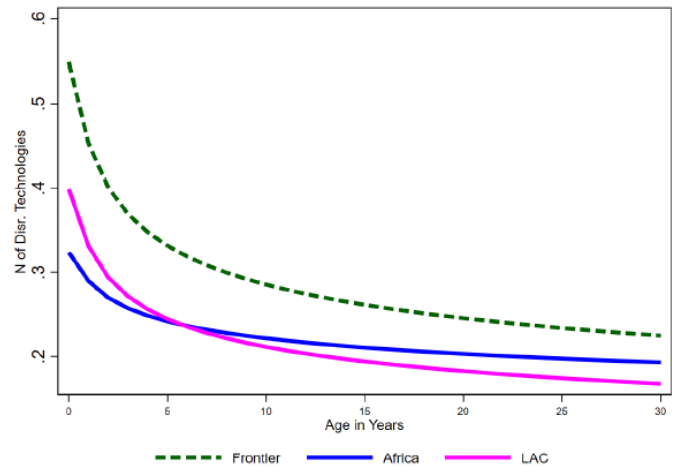
Estimated Technology Sophistication, Number of workers, and Number of firms (bubble)

Digital Entrepreneurship can be an enabler of tech diffusion, but the “premium” for disruptiveness is low in Africa

Key disruptive technologies incorporated by African digital tech startups are related to mobile payments and cloud computing



Digital tech startups incorporate more disruptive technologies relative to older ones.



Questions:

- 1) What can AI do to facilitate technology diffusion and the creation of a larger number of good-quality firms?**
- 2) Who may benefit most? (The distributional effects)**
- 3) How can we build strong market incentives to direct AI solutions towards entrepreneurship and labor complementary tasks? (Policies)**

Artificial Intelligence and the Labour Market

7 November 2023
S4YE Partner Summit 2023

Stijn Broecke
Senior Economist



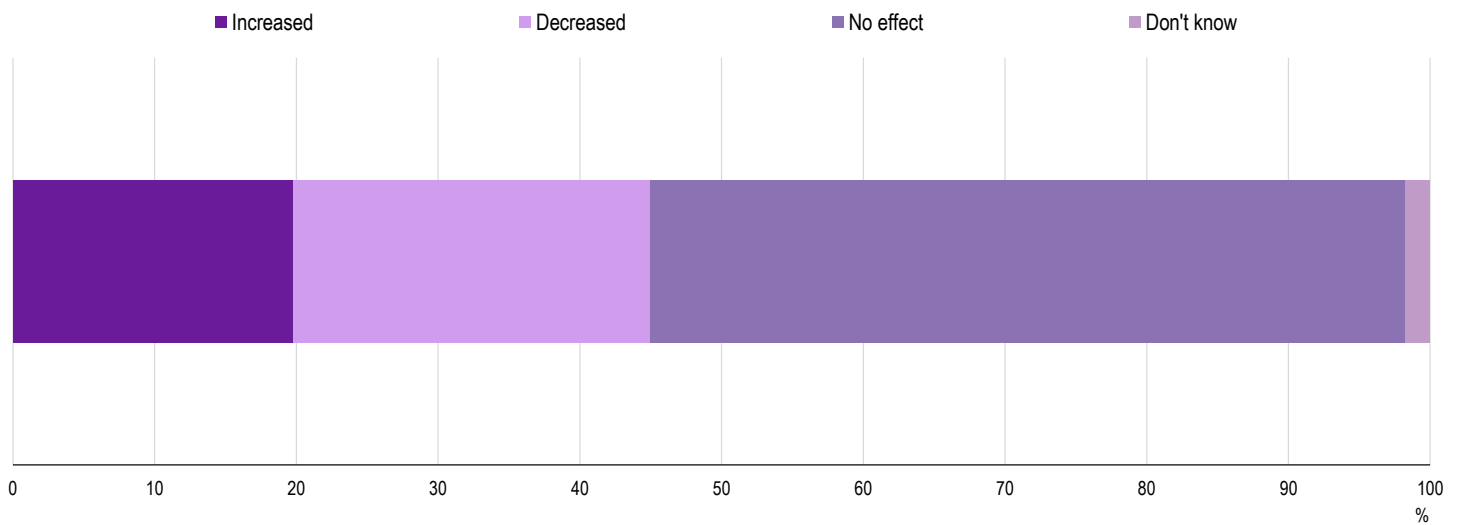
<http://oe.cd/employment-outlook>



There is little evidence of significant employment effects of AI so far

AI impact on overall employment in company

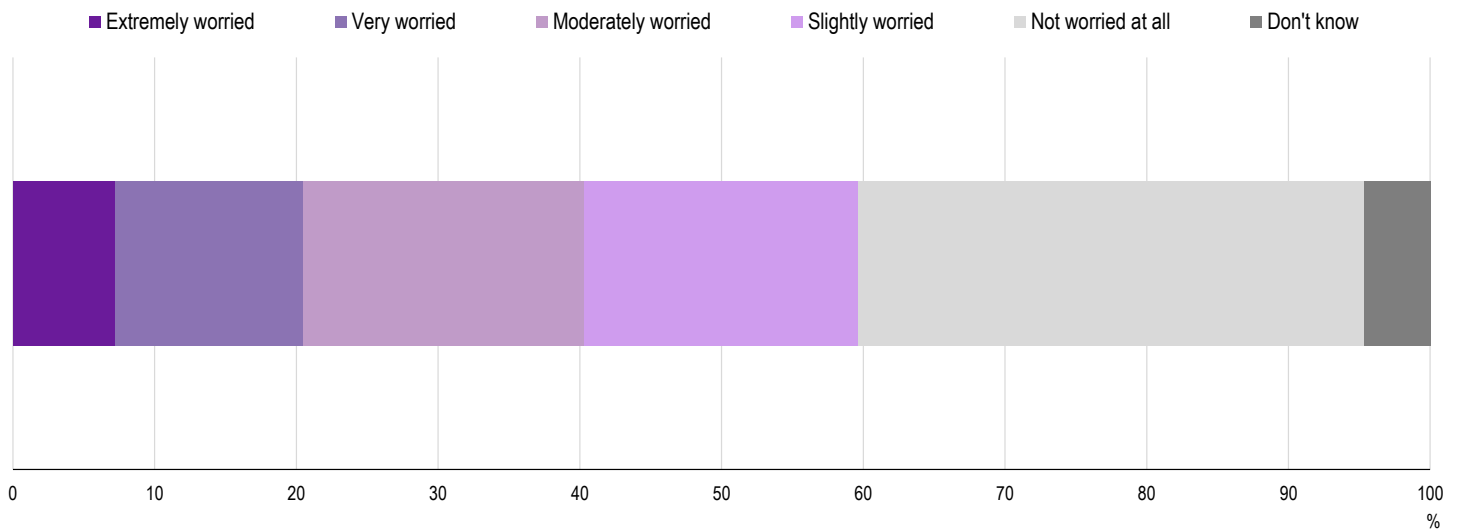
% of employers in manufacturing and finance sectors who say that employment has increased/decreased/stayed the same



Many workers are worried about job loss to AI

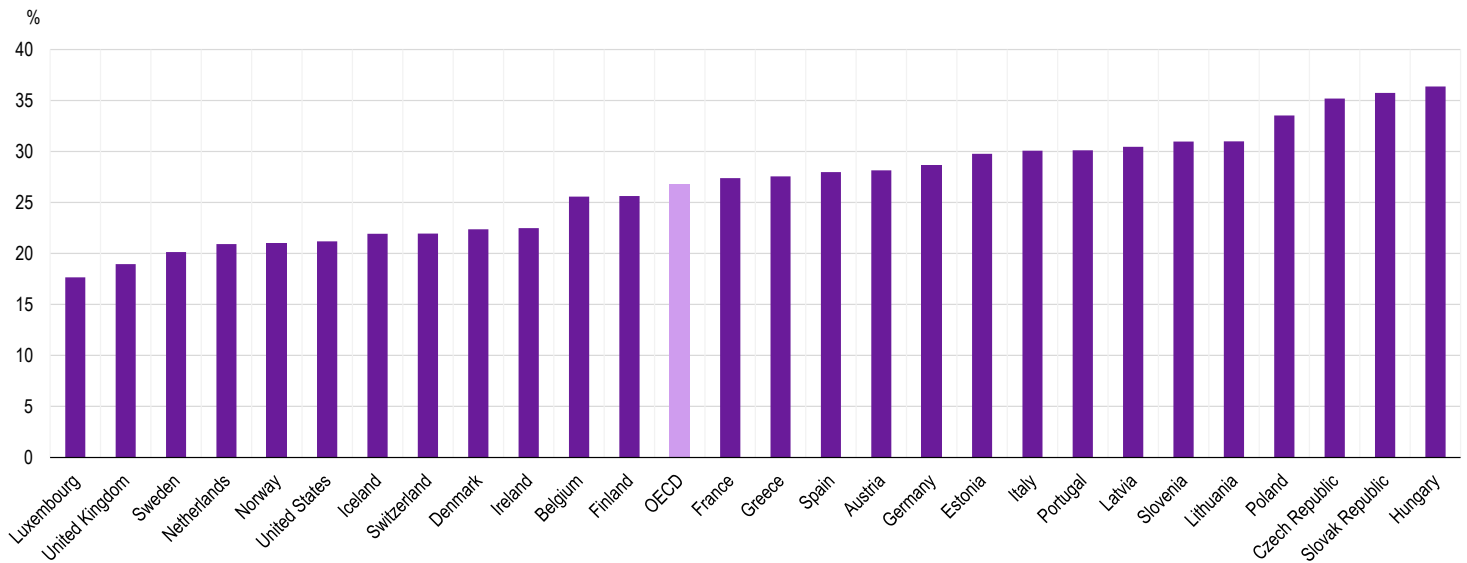
Share of workers worried about losing their job to AI in the next 10 years

% of workers



The risk of automation remains significant

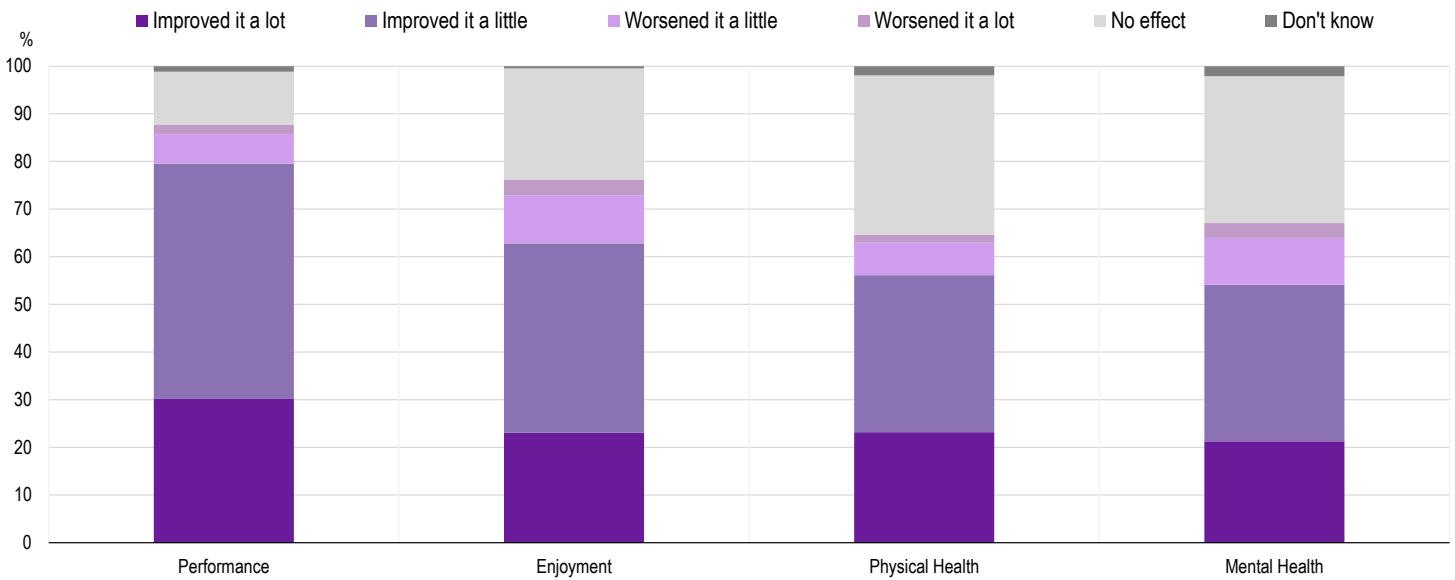
Share of employment in occupations at the highest risk of automation by country, 2019



AI can have a positive effect on job quality

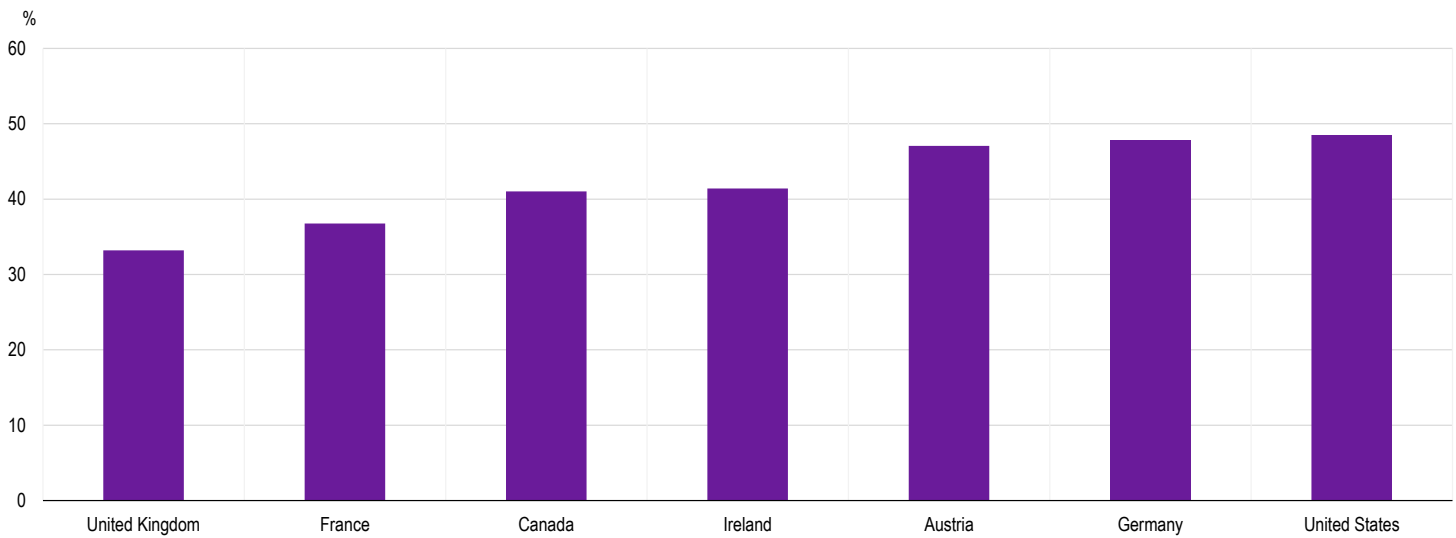
The impact of AI on performance and working conditions

% of workers who work with AI



Investing in skills will be important

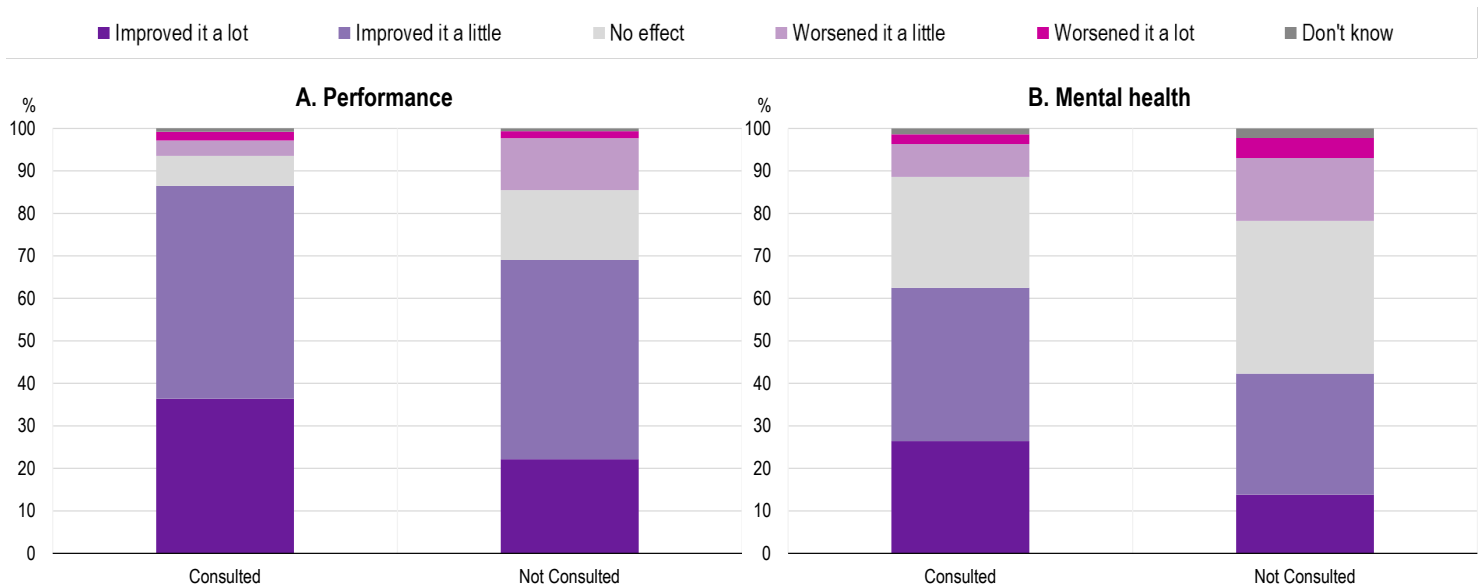
Share of employers saying lack of skills is a barrier to adopting AI
% of employers



Social dialogue can lead to better outcomes

The impact of AI on performance and working conditions, by worker consultation

% of workers who work with AI



Youth may be at particular risk

- More precarious contracts
- Labour market adjustments often happen through young people entering new kinds of jobs
- AI is a general purpose technology that will affect all sectors and occupations
- The speed of development/adoption will be a challenge



Thank you

Find out more about our work at:

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